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PROGRESS IN ANTIBIOTICS REPORTED

The Third Scientific Session of the Division of Clinical Medicine, Academy of Medical Sciences USSR, dedicated to the use of antibiotics in clinical practice, met in Saratov, with an attendance of 40 active and corresponding members of the Academy, more than 200 professors and docents, and about 1,500 practicing physicians.

Prof G. F. Gauze reported on research work which led to the discovery of many polypeptide antibiotics (polymyxin, bacitracin, "circulin," enniatine, Soviet gramicidin, etc.). A number of antibiotics are dissimilar in chemical structure and identical in their therapeutic properties. Professor Gauze emphasized the importance of the general tonus of the macroorganism. He also asserted that antibacterial action develops for an increase and a decrease in the optimal concentration of penicillin in the organism. Dihydrostreptomycin, a product of streptomycin hydrogenation, has the same antibacterial action as streptomycin but is considerably less toxic. Potassium iodide makes the action of streptomycin considerably more potent. Certain cultures of actinomyces which are readily absorbed by the intestines (chloromycetin, aureomycin, etc.) may serve as specific etiotropic therapeutic agents for typhus and other rickettsioses. Gramicidin has been used successfully in the prevention of scarlet fever and whooping cough.

V. S. Derkach presented data on studies of antibacterial properties of a blue pigment (pyocyanin), a product of Bacillus pyocyaneus. The bacterial antagonism of the Bacillus pyocyaneus has long been known. Recently, Professor Kiprianov synthesized a new substance, "sanazin," from the produce of Bacillus pyocyaneus. Sanazin is highly antibacterial, and is less toxic and more readily soluble than pyocyanin. Professor Derkach gave intravenous injections of sanazin for certain forms of metastatic tuberculosis of the eyes (chorioretinitis and uveitis) with great success. He also used sanazin in treating scarlet fever and bacterial dysentery.

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Prof S. I. Sherishorina of the Saratov Medical Institute reported on morphological changes in the bacterial cell acted upon by penicillin. Penicillin reduced the virulence of the microorganism, reduced the factor of dissemination, and increased the culture's phagocytosis.

Prof A. Ye. Rabukhin, Corresponding Member A. Ye. Prozorov, and Prof V. I. Puzik submitted reports on the use of streptomycin in the treatment of tuberculosis. Rabukhin reported that the toxicity of streptomycin may be attenuated with certain antihistamines. This fact is particularly important in the treatment of tubercular meningitis. Rabukhin confirmed Gauze's conclusion on the advantages of dihydrostreptomycin. Streptomycin is only weakly active in chronic fibrous and cavernous types of tuberculosis of the lungs. Puzik noted that the use of streptomycin for tuberculosis of the lungs produced an immediate decrease in the nidal perifocal inflammation. Streptomycin promotes fibrous transformation of tubercules to sclerosis and hyalinosis, and also helps increase the number of lymphoid elements. It has almost no effect upon the wall of chronic caverns and upon large, encapsuled, caseous foci. Acute tubercular meningitis transforms into chronic form under a prolonged action of streptomycin. Proliferation in the vascular wall leads to contraction of the vascular canal until it is almost completely obliterated. This disrupts circulation in the brain and leads to encephalomalacia.

Corresponding Member A. F. Tur submitted a report on penicillin therapy for newborn and premature babies. N. S. Vedrov recounted observations in his clinic, where primary syphilis is treated with penicillin and induced fever.

Prospects for penicillin therapy in chronic ulcerative endocarditis were convincingly shown in Active Member A. L. Myasnikov's report. An extensive study showed that earlier failures were caused by insufficient intensity of the treatment. Only large doses administered for a long time are effective. Prompt treatment is also very important. Good results are obtained faster and more frequently by the early administration of antibiotics. In chronic ulcerative endocarditis, penicillin first eliminates the fever, then the tendency towards anemia; monocytosis and the positive endothelial symptom disappear later. Lastly, hematuria and albuminuria are decreased and finally cured. Negative results were obtained in the penicillin therapy of chronic ulcerative endocarditis with a tendency towards cardiac insufficiency; sometimes penicillin also produced increased decompensation in these cases. Therefore, penicillin should be used with the introduction of Vitamin B-complex, which helps the oxidizing-reducing processes in the myocardium, thus preventing development of cardiac decompensation. Penicillin is not effective in treating rheumatism of rheumatic endocarditis.

M. S. Vovsi reported on the treatment of purulent infections of the lungs and pleura with penicillin. The role of penicillin in the complete therapy of leukosis was depicted in Corresponding Member Kh. Kh. Vlados' report.

Active Member I. G. Rufanov reported on penicillin therapy in the surgical diseases clinic. He noted a marked difference in the duration of action and concentration of penicillin for various injection methods, i.e., intravenous, subcutaneous, intratracheal, and nasal. Survey work of clinicists and theorists established that penicillin increases the permeability of the capillaries, improves the coagulation rate, and aids in the rapid restoration of normal kidney function. Antibacterial properties of an antibiotic can be prolonged by administering it with preserved blood and by using novocaine and pyramidon solutions for local anesthesia.

Prof A. L. Arendt reported a method developed and used (in a few cases only) for two-phase surgical treatment of a brain nodule in conjunction with streptomycin therapy. Corresponding Member B. V. Ognev emphasized the importance of the lymphatic system in the process of penicillin absorption. Prof A. A. Vishnevskiy reported on the treatment of inflammatory processes by novocaine blockade, sleep therapy, and penicillin. Docent P. P. Vladimirov worked out an original method

of penicillin therapy with iontophoresis in the treatment of soft tissues and the bones. The galvanic current reaching the penicillin ions in the depths of infected tissues acts favorably on the vessels and nerve ends and alleviates pain. -- N. Krakovskiy, Doctor of Medical Sciences, Saratov

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